

Commendable Practices from Groups 1 & 2

Inspection Activities During the Transition from an Operating Reactor to a Defueled Status with a Commitment to Permanently Cease Power Operations

Committee on Nuclear Regulatory Activities (CNRA)

Working Group on Inspection Practices (WGIP)

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Workshop Discussion Group

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Workshop Objectives

- Share and exchange information between workshop participants on the impact of the transition phase on RB inspections practices and inspection programs
- Identify commendable inspection practices by RBs for gaining confidence that sufficient oversight of licensee activities will be maintained during the transition phase

Introduction

- Commendable practices (CP) were established relative to the transition phase which is defined, for the purposes of this workshop, as the time frame between the licensee's commitment to permanently cease power operations and final defueling of the reactor vessel
- It is possible that these CPs may be applicable beyond the transition phase
- Not all CPs are specific to inspection activities but were deemed applicable to this workshop topic

Challenges

- Is the NPP really shutting down?
- Shutting down could be a sudden licensee decision
- Transition periods may vary widely (e.g. 5 years vs. 3 months)
- How would the RB deal with a licensee faced with significant financial resource challenges (e.g. bankruptcy)

Observation

- Licensee financial resources should be a factor which is considered by the RB to understand licensee decisions during the transition phase

Major Focus Areas

- RB's Programme
- Technical Inspection Activities
- Safety Culture

RB's Programme

- **CP1:** The RB should be prepared for the transition phase.
 - Define the information needed from the licensee to establish an appropriate inspection programme (e.g. proposed changes to technical specifications, plant modifications and the licensee's organisation etc.)
 - Establish communication scheme with the licensee to ensure appropriate awareness of future licensee actions (e.g. provide sufficient time for inspection planning)
 - Ensure that adequate licensee performance indicators are in place
 - Conduct an analysis to determine RB inspection programme changes
 - Conduct an analysis of necessary RB organisational changes (preferably prior to an announcement of a plant closure)

RB's Programme (cont'd)

- **CP2:** The RB's inspection programme should be optimized to ensure appropriate oversight of licensee activities during the transition phase.
 - Available inspection resources should be focused in areas of most benefit
 - Inspection programme should have sufficient flexibility to allow moving inspection resources from areas of less importance to areas that increase in importance
 - Some inspections may not be necessary if the plant is only to be operated for a short period of time (e.g. certain design basis inspections)

RB's Programme (cont'd)

- **CP2:** The RB's inspection programme should be optimized to ensure appropriate oversight of licensee activities during the transition phase. (cont'd)
 - The RB inspection effort should be proportional to the licensee's activities (e.g. increase or decrease level of effort of inspections - major plant modifications)
 - Changes to the inspection programme take into account inspection findings

RB's Programme (cont'd)

- **CP3:** Inspection resources should not be reduced until the transition phase is complete.
 - Still a fully functional reactor

RB's Programme (cont'd)

- **CP4:** The RB should establish a programme to evaluate the licensee's safety culture during the transition phase.
 - RB inspectors should receive adequate safety culture training
 - The RB should ensure it has sufficient expertise to assess safety culture issues
 - RB programme should develop safety culture indicators (e.g. motivation, morale, staff workload, relationship between RB and licensee)
 - Includes a process to analyse and trend safety culture data
 - The programme should recognise that at multi-unit sites/licensees where at least one unit remains operational, the safety culture consequences (e.g. resulting from job losses) may not be so important or significant

Technical Inspection Activities

- **CP5:** The RB should increase oversight and inspection of the licensee's safety culture during the transition phase.
 - Baseline inspection data is obtained
 - Immediate inspection upon announcement of NPP shutdown
 - Safety culture inspections are performed at sufficient intervals to obtain data for trending
 - Assessment scope should be sufficiently diverse to obtain an overall image of the licensee's safety culture

Technical Inspection Activities (cont'd)

- **CP6:** The RB should inspect outstanding regulatory commitments that continue to remain applicable up to the end of the transition phase.
 - Licensee should identify regulatory commitments that are no longer applicable, justify why, and obtain RB approval

Technical Inspection Activities (cont'd)

- **CP7:** The RB should assess and inspect the licensee's evaluation of actions to be taken in response to identified non-compliances. More specifically, the RB should provide special consideration in the following areas during the transition phase:
 - What is the safety relevance or safety significance of the finding?
 - How firm is the commitment to shutdown the NPP?
 - What are the alternative compensatory measures proposed by the licensee?
 - How long does it take the licensee to make the change?
 - How long will the licensee's actions be in effect before end of life?
 - Will the action or change be useful beyond the transition phase?
 - What are the external pressures to implement changes (e.g. public)?

Technical Inspection Activities (cont'd)

- **CP8:** During the transition phase, the RB should conduct inspections to verify that the licensee has control and understands the configuration of systems, structures and components (SSC).
 - Systems that have a safety function, that are functional or that are abandoned are defined and labeled
 - System boundaries are clearly defined (e.g. when a system is modified and part of it is abandoned)

Technical Inspection Activities (cont'd)

- **CP9:** The RB should inspect for changes to the licensee's maintenance programme to identify reductions in maintenance activities of safety related SSCs that could negatively impact the level of safety.
 - Which safety related SSCs are required pre shutdown and which are required post shutdown?
- **CP10:** The RB should inspect licensee organisational changes for the transition phase.
 - Review the licensee's analysis of organisational changes
 - Are the changes appropriate and effective?
 - Are sufficient staffing levels maintained?

Technical Inspection Activities (cont'd)

- **CP11:** The RB should increase inspections of the licensee's oversight of contractor performance during the transition phase.
 - High probability of less licensee staff and more contractors
 - Contractor staff is integrated into the licensee's safety culture and is trained on human performance tools and safety culture expectations

Technical Inspection Activities (cont'd)

- **CP12:** If the licensee increases fuel handling activities, the RB should increase inspections in that area.
 - Fuel handling in spent fuel pool
 - Dry cask loading activities
 - Heavy load lifting
 - Additional radiation protection inspections
- **CP13:** If the licensee increases its effort in waste management, the RB should increase inspections in that area.
 - May also need additional radiation protection inspections

Safety Culture

- **CP14:** The RB should ensure that the licensee has implemented a process/programme for two-way communication between licensee management and staff.
 - Reaffirm safety expectations and future changes
 - Methods of communication may include verbal, website, etc.

Questions

